PATENT ABSTRACTS OF JAPAN

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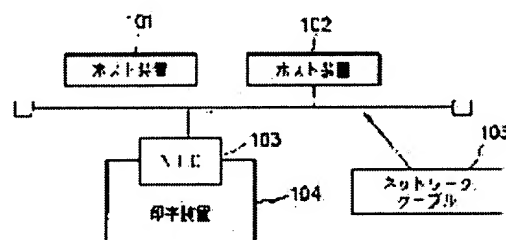(22)Date of filing :   07.08.1997

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(54) NETWORK PRINTER

(57)Abstract:
PROBLEM TO BE SOLVED: To provide a network
printer which can easily execute necessary setting at the
time of connecting the IP address of a printing device to
a TCP (transmission control protocol)/IP(internet
protocol) network.
SOLUTION: In the network printer, the plural printing
devices 104 and a hot device 101 are connected in a
TCP/IP network. The printing device 104 has NIC
(network interface card) for connecting it to the network
and it broadcasts a setting protocol containing the NIC
address of the printing device to which the IP address is
to be set with utility software operating on the host
device 101 to the network. The printing device inputting
the setting protocol compares a MAC(media access
control) address contained in the protocol with a self-MAC address. When they are matched,
indispensable setting at the time of connecting NIC to the network can easily be set by
changing self-setting.

LEGAL STATUS

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the examiner's decision of rejection or
application converted registration]

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decision of rejection]

[Date of extinction of right]

* NOTICES *

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CLAIMS

[Claim(s)]
[Claim 1] It is the network printer characterized by broadcasting a setting protocol including the address of said I/F card of said printer to set an IP address to said TCP/IP network with the utility software which has an I/F card for connecting said two or more printers to said TCP/IP network in the network printer to which two or more printers and host equipment were connected in the TCP/IP network, respectively, and operates on said host equipment.
[Claim 2] Said printer which received said setting protocol broadcast by said utility software is a network printer according to claim 1 characterized by changing an own setup according to said setting protocol when the address of said I/F card contained in said setting protocol and the address of said own I/F card are in agreement.

[Translation done.]

DETAILED DESCRIPTION

[Detailed Description of the Invention]
[0001]
[Field of the Invention] Especially this invention relates to the network printer which formed the network with the TCP/IP protocol about a network printer.
[0002]
[Description of the Prior Art] The so-called LAN which carries out network connection of several host equipments or the printer in recent years, and is shared between two or more users (LOCAL AREA NETWORK) The environment has spread with vigor remarkable for share-izing of a printer or storage, and efficient-izing. It is supposed with the spread of the Internet that it is especially the LAN environment connected with the TCP/IP (TRANSMISSION CONTROL PROTOCOL/INTERNET PROTOCOL) protocol the network connection gestalt spread will be most expected to be from now on.
[0003] In the above-mentioned TCP/IP environment, the respectively unique address is assigned by each network devices, such as a printer and host equipment, this address is made into the destination and the data transfer is performed. Although this address was called the IP address (INTERNET PROTOCOL ADDRESS), since data were not able to be transmitted to the printer which has not set this up, a setup had to be inputted before use.
[0004]
[Problem(s) to be Solved by the Invention] However, this IP address is 1 although set up from the panel equipment of a printer etc. Since it is the LCD (LIQUID CRYSTALDISPLAY) display of several lines, when a setting item crosses variably, complicated menu structure is taken and it sets up very much, and the panel equipment of a printer is ******.
2) The printer which does not have panel equipment has also appeared in recent years for cost-cut-izing, and how an IP address is set up to these printers poses a problem.
It was accompanied by which problem.
[0005] This invention is made in view of the above troubles, and in case it connects I/F cards, such as an IP address, to a network, it aims at offering the network printer which can perform an indispensable setup easily.
[0006]
[Means for Solving the Problem] In order to attain this purpose , the network printer of this invention is the network printer with which two or more printers and host equipment connected and consisted of TCP/IP networks , and two or more printers have an I/F card for connect with a TCP/IP network , respectively , and are constitute , and it is characterize by to broadcast to a network the setting protocol which included the address of the I/F card of a printer to set an IP address with the utility software which operates on host equipment .
[0007] The printer which received the setting protocol broadcast by utility software is good to change an own setup according to a setting protocol, when the address of an I/F card and the address of an own I/F card which are included in a setting protocol are in agreement.
[0008]

[Embodiment of the Invention] Next, with reference to an accompanying drawing, the gestalt of operation of the network printer of this invention is explained to a detail. Reference of drawing 1 and drawing 2 shows 1 operation gestalt of the network printer of this invention.

[0009] Drawing 1 is the connection block diagram showing the connection relation of the network printer of this invention. In drawing 1 , 101 and 102 are host equipment connected on the network. In addition, the utility software which performs the monitor and setup of printing by which network connection was similarly carried out operates on these host equipment.

[0010] 103 is an option I/F card (henceforth NIC) for carrying out network connection of the printer, decodes a protocol and sends the printing data sent to self to a printer. 104 is a printer which prints the printing data received from NIC. 105 is a network cable which constitutes a network physically.

[0011] Next, the example of this operation gestalt of operation is explained using the flow chart of drawing 2 . If utility software is started, it will broadcast the packet for management and a setup (what summarized information and was made into fixed magnitude) on a local network (step S1). If only it connects physically even if the IP address is not set up since it is sending data to an IP address to all the devices on a network regardless of broadcasting, this data is sent to all printers. This packet is called a response demand packet.

[0012] On the other hand, the printer which is supporting this protocol will return the response data containing an own MAC Address (MEDIA ACCESS CONTROL ADDRESS) to utility software, if this packet is received (step S2).

[0013] Utility software makes an operator recognize which printer is operating now by displaying the information on a printer with a response on a host equipment screen. Moreover, since the MAC Address of each NIC is contained in response data, it can know which NIC is which MAC Address.

[0014] When setting up the IP address of a certain NIC etc. now, the setting packet containing the MAC Address of the partner who wants to set up is broadcast (step S3). Since this setting packet is broadcasting, it is sent to all devices like a response demand packet.

[0015] When its MAC Address is compared with the MAC Address described in the packet (SUTTEPU S4) and this is in agreement (steps S5/YES), the printer which received this setting packet regards it as that by which this packet was sent to self, and changes the contents of a setting (step S6). When these are not in agreement, it is regarded as (steps S5/NO) and the thing sent towards other NIC, and the data is canceled (step S7).

[0016] By the above-mentioned flow, an IP address becomes possible [setting up also to non-set up NIC].

[0017]

[Effect of the Invention] When the network printer of this invention introduces a printer newly, it can perform very easily an indispensable setup in a network connection top, such as an IP address, so that more clearly than the above explanation.

[0018] Moreover, when a printer is introduced newly, an indispensable setup in a network connection top, such as an IP address, can be performed very easily.

[Translation done.]

* NOTICES *

DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]
[Drawing 1] It is the connection block diagram showing the connection relation of the network printer of
this invention.
[Drawing 2] It is a flow chart to show the example of operation by the network printer of this invention.
[Description of Notations]
101 102 Host equipment
103 NIC
104 Printer
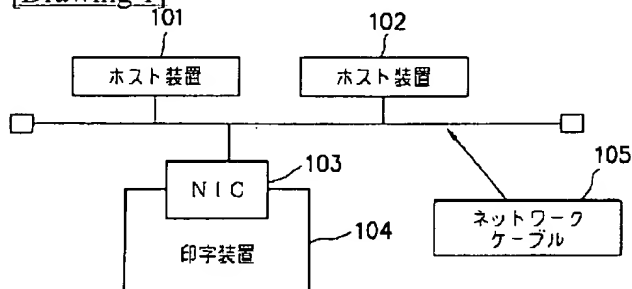105 Network Cable

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DRAWINGS

[Drawing 1]

[Drawing 2]

[Translation done.]

* NOTICES *

JPO and NCIPI are not responsible for any
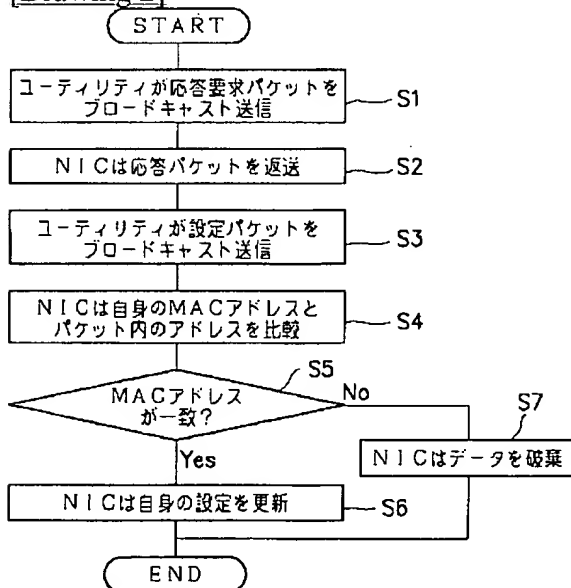damages caused by the use of this translation.

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CORRECTION OR AMENDMENT

[Kind of official gazette] Printing of amendment by the convention of 2 of Article 17 of Patent Law
[Section partition] The 3rd partition of the 6th section
[Publication date] November 15, Heisei 14 (2002. 11.15)

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G06F    3/12

B41J    29/38
G06F    13/00     353
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[FI]

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G06F    3/12       A
D
B41J    29/38       Z
G06F    13/00     353 V
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[Procedure revision]
[Filing Date] August 28, Heisei 14 (2002. 8.28)
[Procedure amendment 1]
[Document to be Amended] Specification
[Item(s) to be Amended] The name of invention
[Method of Amendment] Modification
[Proposed Amendment]
[Title of the Invention] A network printer and a printer
[Procedure amendment 2]
[Document to be Amended] Specification
[Item(s) to be Amended] Claim
[Method of Amendment] Modification
[Proposed Amendment]
[Claim(s)]
[Claim 1] In the network printer to which two or more printers and host equipment were connected in the TCP/IP network,
Said two or more printers have an I/F card for connecting with said TCP/IP network, respectively,

Said host equipment has a means to broadcast a setting packet including the address of the I/F card of said printer to set an IP address to said TCP/IP network,

Said printer is a network printer characterized by having further a means to change an own setup according to said setting packet when the address of an I/F card and the address of an own I/F card which receive the setting packet broadcast by this means, and are included in the setting packet are in agreement.

[Claim 2] It is a printer connectable with host equipment in a TCP/IP network,

The I/F card for connecting with said TCP/IP network,

A means to receive a setting packet including the address of said I/F card broadcast by said host equipment,

It is the printer characterized by having a means to change an own setup according to said setting packet when the address of an I/F card and the address of an own I/F card which are included in the setting packet which received with this means are in agreement.

[Procedure amendment 3]

[Document to be Amended] Specification

[Item(s) to be Amended] 0006

[Method of Amendment] Modification

[Proposed Amendment]

[0006]

[Means for Solving the Problem] In order to attain this purpose the network printer of this invention It is the network printer with which two or more printers and host equipment connected and consisted of TCP/IP networks. Two or more printers have an I/F card for connecting with a TCP/IP network, respectively, and are constituted. Host equipment It has a means to broadcast a setting packet including the address of the I/F card of a printer to set an IP address to a network. A printer The setting packet broadcast by the means is received, and when the address of an I/F card and the address of an own I/F card which are included in the setting packet are in agreement, it is characterized by having further a means to change an own setup according to a setting packet.

[Procedure amendment 4]

[Document to be Amended] Specification

[Item(s) to be Amended] 0007

[Method of Amendment] Modification

[Proposed Amendment]

[0007] Moreover, the I/F card for the printer of this invention being a printer connectable with host equipment in a TCP/IP network, and connecting with the above-mentioned TCP/IP network, A means to receive a setting packet including the address of the above-mentioned I/F card broadcast by the above-mentioned host equipment, When the address of an I/F card and the address of an own I/F card which are included in the setting packet which received with the means are in agreement, it has a means to change an own setup according to the above-mentioned setting packet.

[Procedure amendment 5]

[Document to be Amended] Specification

[Item(s) to be Amended] 0015

[Method of Amendment] Modification

[Proposed Amendment]

[0015] When its MAC Address is compared with the MAC Address described in the packet (step S4) and this is in agreement (steps S5/YES), the printer which received this setting packet regards it as that by which this packet was sent to self, and changes the contents of a setting (step S6). When these are not in agreement, it is regarded as (steps S5/NO) and the thing sent towards other NIC, and the data is canceled (step S7).

[Translation done.]